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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ZIMMERMAN, JOSHUA D	
ART UNIT	PAPER NUMBER
2854	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,394	VERSCHUEREN, ERIC	
	Examiner	Art Unit	
	Joshua D. Zimmerman	2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 15-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 15-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/03/2006 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 4, 5, 6, 17 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Kamitani (US 2002/0098288) in view of McCullough et al. (WO 99/21715).

Regarding claim 1, Kamitani teaches "a method of making a heat-sensitive lithographic printing plate precursor (paragraph 11) comprising the steps of

(i) providing a web of a lithographic support having a hydrophilic surface (paragraph 12 and paragraph 47, lines 13-15);

(ii) applying a coating comprising a phenolic resin on the hydrophilic surface of the web (paragraph 51);

(iii) drying the coating (paragraph 12);

(iv) heating the web wherein the temperature is maintained above 150°C (paragraph 12, 3rd example from the bottom of table 1); and

(v) winding the precursor on a core or cutting the precursor into sheets (paragraph 70)."

Kamitani does not specifically teach that "the temperature is maintained above 150°C during a period of between 1 and 30 seconds." Kamitani does suggest the ability to vary the temperature and time conditions in order to achieve desired results (see, for example, Table 1 and Table 2). McCullough et al. teach a method of heating a printing plate precursor (abstract). Further, McCullough et al. teach the desire and ability to vary, by trial and error, the time and temperature settings to achieve desired sensitivity in the printing plate precursors (page 7, lines 23-24 and lines 33-34). McCullough et al. also teach that when the printing plate precursors are heated to a higher temperature, the precursors should be held at that temperature for a shorter time (see the sentence bridging pages 7 and 8). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, through routine experimentation, to maintain the temperature of the precursors above 150°C for a period of between 1 and 30 seconds in order to achieve a desired sensitivity.

Regarding claim 4, Kamitani further teaches "wherein the heating step is carried out by exposing the precursor to infrared or microwave radiation (paragraphs 33 and 37)."

Regarding claim 5, Kamitani further teaches "further comprising a cooling step between step (iv) and step (v) (paragraph 38).

Regarding claim 6, Kamitani further teaches "wherein during the cooling step the web temperature of the precursor is reduced at an average cooling rate which is higher than if the precursor would be kept under ambient conditions (paragraph 39)."

Regarding claim 17, Kamitani further teaches "further comprising a cooling step between step (iv) and step (v) (paragraph 38)."

Regarding claim 22, Kamitani further teaches "wherein during the cooling step the web temperature of the precursor is reduced at an average cooling rate which is higher than if the precursor would be kept under ambient conditions (paragraph 39)."

3. Claims 7, 8, 10 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamitani and McCullough et al.

Kamitani and McCullough et al. teach all that is claimed in claims 5, 6 and 22, as discussed above.

Regarding claims 7 and 23, Kamitani and McCullough et al. do not specifically teach "wherein said average cooling rate is at least 0.5°C/s." However, Kamitani does teach the use of a forced cooling system (paragraph 39) in conjunction with a continuous web-type system (figure 1). The exact cooling rate is not disclosed, but this

is a rapid cooling system (paragraph 41) similar to the system claimed by applicant (page 8, lines 3-7 of applicant's disclosure). Further, Kamitani teaches the desire to have a short cooling time in order to decrease the time until an overcoat layer can be applied (last sentence of paragraph 39). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, through routine experimentation, to set the cooling rate at a rate higher than 0.5°C/s in order to achieve a quick cooling time in order to prepare the precursor for an overcoat.

Regarding claims 8, 24 and 25, applicant admits the Tg of phenolic resins to be between 75°C and 95°C (page 10, lines 5-7 of applicant's disclosure). Kamitani discloses cooling from temperatures above 95°C (Table 1 and Table 2) to temperatures below 75°C (paragraph 41). The exact cooling rate is not disclosed, but this is a rapid cooling system (paragraph 41) similar to the system claimed by applicant (page 8, lines 3-7 of applicant's disclosure). Further, Kamitani teaches the ability change the cooling time to meet process needs (last sentence of paragraph 39). Also, it is an inherent property of polymer processing that cooling too quickly from a temperature above the Tg to a temperature below the Tg results in voids and/or other defects in the polymer microstructure, thus deteriorating the polymer stability. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, through routine experimentation, to make the cooling rate less than 10°C/s in order to prevent the formation of voids and/or other defects, so as to enhance the stability of the polymer in the printing plate precursor.

Regarding claim 10, Kamitani further teaches "T1 is Tg+20°C and T2 is Tg-20°C (paragraph 41 and table 1 and table 2. The high temperatures are 20 degrees higher than Tg and the low temperatures are 20 degrees lower than Tg).

4. Claims 3, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamitani and McCullough et al. as applied to claim 1 above, further in view of Kojima et al. (US 5,380,612).

Regarding claim 3, Kamitani does not specifically teach "wherein the heating step is carried out by blowing hot air or steam onto the precursor." However, Kamitani does suggest it is possible to use hot air to heat the printing plate (paragraph 37, lines 2-3). Further, Kojima et al. teach the equivalence of hot air heaters to infrared heaters (column 10, lines 55-58). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a hot air heater in place of the heater of Kamitani to save money by using existing hot air heaters.

Regarding claim 16, Kamitani further disclose "further comprising a cooling step between step (iv) and step (v) (paragraph 38)."

Regarding claim 19, Kamitani further disclose "wherein during the cooling step the web temperature of the precursor is reduced at an average cooling rate which is higher than if the precursor would be kept under ambient conditions (paragraph 39)."

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamitani and McCullough et al. in view of Kojima et al. as applied to claims 3, 16, and 19 above.

Regarding claim 21, Kamitani in view of Kojima et al. does not specifically teach "wherein said average cooling rate is at least 0.5°C/s." However, Kamitani does teach the use of a forced cooling system (paragraph 39) in conjunction with a continuous web-type system (figure 1). The exact cooling rate is not disclosed, but this is a rapid cooling system (paragraph 41) similar to the system claimed by applicant (page 8, lines 3-7 of applicant's disclosure). Further, Kamitani teaches the desire to have a short cooling time in order to decrease the time until an overcoat layer can be applied (last sentence of paragraph 39). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, through routine experimentation, to set the cooling rate at a higher than 0.5°C/s in order to achieve a quick cooling time in order to prepare the precursor for an overcoat.

6. Claims 9, 26, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamitani and McCullough et al., as applied to claims 8, 24 and 25 above, in view of Price (6,007,240).

Regarding claims 9, 26 and 27, Kamitani and McCullough et al. do not specifically disclose three different phases. However, it is an inherent property of polymer processing that cooling too quickly from a temperature above the Tg to a temperature below the Tg results in voids and/or other defects in the polymer microstructure, thus deteriorating the polymer stability. It is also a property of the glass transition region that polymer relaxation effects are stronger than above or below the transition region. Price teaches this fact (column 5, lines 63-65). Therefore, it would

have been obvious to one of ordinary skill in the art at the time of the invention, to have a slower cooling rate in the glass transition region in order to reduce the formation of voids and/or other defects, so as to enhance both the microstructure and the stability of the polymer in the printing plate precursor.

Regarding the further limitation of a cooling rate of at least 10°C/s in the first and third phases, Kamitani teaches the desire to have a short cooling time in order to decrease the time until an overcoat layer can be applied (last sentence of paragraph 39). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, through routine experimentation, to set the cooling rate at a rate higher than 10°C/s in these regions in order to achieve a quick cooling time in order to prepare the precursor for an overcoat.

Regarding claim 28, Kamitani further teaches "T1 is Tg+20°C and T2 is Tg-20°C (paragraph 41 and table 1 and table 2. The high temperatures are 20 degrees higher than Tg and the low temperatures are 20 degrees lower than Tg).

7. Claims 2, 12, 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamitani as applied to claim 1 above, in view of McCullough et al. (WO 99/21715). Kamitani teaches all that is claimed in claim 1, as discussed above. Kamitani does not specifically teach "wherein during the heating step the web temperature is maintained above 170°C during a period of between 1 and 30 seconds." Kamitani does suggest the ability to vary the temperature and time conditions in order to achieve desired results (see, for example, Table 1 and Table 2). McCullough et al.

teach a method of heating a printing plate precursor (abstract). Further, McCullough et al. teach the desire and ability to vary, by trial and error, the time and temperature settings to achieve desired sensitivity in the printing plate precursors (page 7, lines 23-24 and lines 33-34). McCullough et al. also teach that when the printing plate precursors are heated to a higher temperature, the precursors should be held at that temperature for a shorter time (see the sentence bridging pages 7 and 8). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, through routine experimentation, to maintain the temperature of the precursors above 170°C for a period of between 1 and 30 seconds in order to achieve a desired sensitivity.

Regarding claim 12, Kamitani further teaches "wherein the heating step is carried out by exposing the precursor to infrared or microwave radiation (paragraphs 33 and 37)."

Regarding claim 30, Kamitani further teaches "further comprising a cooling step between step (iv) and step (v) (paragraph 38)."

Regarding claim 32, Kamitani further teaches "wherein during the cooling step the web temperature of the precursor is reduced at an average cooling rate which is higher than if the precursor would be kept under ambient conditions (paragraph 39)."

8. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamitani in view of McCullough et al. as applied to claims 2, 12, 30 and 32 above.

Kamitani in view of McCullough et al. fails to specifically teach "wherein said average cooling rate is at least 0.5°C/s." However, Kamitani does teach the use of a forced cooling system (paragraph 39) in conjunction with a continuous web-type system (figure 1). The exact cooling rate is not disclosed, but this is a rapid cooling system (paragraph 41) similar to the system claimed by applicant (page 8, lines 3-7 of applicant's disclosure). Further, Kamitani teaches the desire to have a short cooling time in order to decrease the time until an overcoat layer can be applied (last sentence of paragraph 39). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, through routine experimentation, to set the cooling rate at a rate higher than 0.5°C/s in order to achieve a quick cooling time in order to prepare the precursor for an overcoat.

9. Claims 11, 15, 18, 29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamitani in view of McCullough as applied to claim 2 above, and further in view of Kojima et al. (US 5,380,612).

Regarding claim 11, Kamitani does not specifically teach "wherein the heating step is carried out by blowing hot air or steam onto the precursor." However, Kamitani does suggest it is possible to use hot air to heat the printing plate (paragraph 37, lines 2-3). Further, Kojima et al. teach the equivalence of hot air heaters to infrared heaters (column 10, lines 55-58). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a hot air heater in place of the heater of Kamitani to save money by using existing hot air heaters.

Regarding claim 29, Kamitani further teaches "further comprising a cooling step between step (iv) and step (v) (paragraph 38)."

Regarding claim 31, Kamitani further disclose "wherein during the cooling step the web temperature of the precursor is reduced at an average cooling rate which is higher than if the precursor would be kept under ambient conditions (paragraph 39)."

Regarding claim 15, Kamitani further teaches "further comprising a cooling step between step (iv) and step (v) (paragraph 38)."

Regarding claim 18, Kamitani further teaches "wherein during the cooling step the web temperature of the precursor is reduced at an average cooling rate which is higher than if the precursor would be kept under ambient conditions (paragraph 39)."

10. Claims 20 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamitani in view of McCullough et al. further in view of Kojima et al. as applied to claims 11, 29 and 31 above.

Regarding claims 20 and 33, Kamitani in view of McCullough et al. further in view of Kojima et al. does not specifically teach "wherein said average cooling rate is at least 0.5°C/s." However, Kamitani does teach the use of a forced cooling system (paragraph 39) in conjunction with a continuous web-type system (figure 1). The exact cooling rate is not disclosed, but this is a rapid cooling system (paragraph 41) similar to the system claimed by applicant (page 8, lines 3-7 of applicant's disclosure). Further, Kamitani teaches the desire to have a short cooling time in order to decrease the time until an overcoat layer can be applied (last sentence of paragraph 39). Therefore it would have

been obvious to one of ordinary skill in the art at the time of the invention, through routine experimentation, to set the cooling rate at a rate higher than 0.5°C/s in order to achieve a quick cooling time in order to prepare the precursor for an overcoat.

Response to Arguments

Applicant's arguments filed 10/03/2006 have been fully considered but they are not persuasive.

11. Applicant argues that Kamitani teaches away from heating at a higher temperature so as to maintain the temperature of the web above 150°C for a period of time. The new grounds of rejection outlined above now use the teachings of Kamitani for the ability to vary the time and temperature values, and then rely on McCullough et al. to teach the criticality of those values upon the sensitivity, thus motivating one skilled in the art to arrive at the claimed invention through routine experimentation.

12. Applicant argues that Kojima fails to teach the equivalence of various types of heaters. However, Kojima lists several types of heaters for heating a photosensitive printing plate, including hot air heaters and infrared heaters. Kojima further teaches that one can be arbitrarily selected from the list. Since Kojima gives no preference to which type of heater should be used, and even says that one can be "arbitrarily selected," clearly the listed means for heating are equivalents. Further, even though Kojima and Kamitani deal with a heating step at a different time, they both deal with the problem of heating a printing plate, and thus one having ordinary skill in the art would have turned to Kojima for a solution to heating a printing plate.

13. In response to applicant's argument that Price is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Price is relied upon for a teaching of an inherent property of all polymers, PVC or otherwise. One having ordinary skill in the art would realize that it is an inherent property of all polymers that the glass transition region has stronger relaxation effects than in the regions above or below the glass transition region, and would not need the teachings of Price. Price is cited merely to show that the knowledge indeed exists in the art.

14. Applicants argue that Kamitani and McCullough et al. are combinable. Examiner disagrees. Kamitani and McCullough et al. deal with the heating of printing plates and varying processing temperatures and holding times in order to achieve desired results.

15. Applicants further argue that McCullough et al. teaches away from high temperatures. While McCullough et al. do suggest an upper limit, said limit is qualified as being merely a 'guide' that McCullough et al. merely 'favor' (page 7, lines 24-25). McCullough et al. clearly teach, and even *encourage*, using trial and error to determine the heating temperature (page 7, lines 23-24). This clearly would not prohibit or prevent one having ordinary skill in the art from trying, through routine experimentation, a higher temperature.

Regardless, McCullough et al. is relied upon for teaching that for higher temperatures, lower holding times are desired, and for teaching that the temperature

and hold times are results-effective variables that the reader is encouraged to vary. Hence, the motivation is present for one having ordinary skill in the art to use routine experimentation to determine the optimal temperature and hold times.

Further McCullough et al. chose the specified temperature 'guide' because of the 'criticality' of the low times that would be required at high temperatures (page 7, lines 17-23). It is well within the scope of routine experimentation to incorporate new technologies and/or knowledge to overcome the 'criticality' of the lower heating times required by the higher temperatures.

16. Applicant also argues that the contrapositive to the statement by McCullough et al. that "the lower the temperature for the heat treatment, the longer the time should be" is invalid. However, contrapositive statements inherently have the same truth-value as the original statements, and therefore McCullough et al. inherently teach that higher temperatures require lower hold times.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Zimmerman whose telephone number is 571-272-2749. The examiner can normally be reached on M-R 8:30A - 6:00P, Alternate Fridays 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua D Zimmerman
Examiner
Art Unit 2854

jdz

JUDY NGUYEN
SUPERVISORY PATENT EXAMINER